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**REMARKS/ARGUMENTS**

Amended claims 39, 48 and 74, and Claims 41-47, 50-56 and 75-83 are pending in this application. Claims 39, 41-48, 50-56 and 74-83 have been rejected. Applicants reserve the right to pursue the original claims and other claims in this application and in other applications.

Claims 39, 41-48, 50-56 and 74-83 stand rejected under 35 U.S.C. § 112 as being indefinite for failing to particularly point out and distinctly claim the subject matter which the applicant regards as the invention. In particular, the Office Action states that “The limitation ‘uniform’ does not define an objective standard wherein the limitation ‘uniform’ can be ascertained. It is unclear what the applicant defines as ‘uniform’ and what degree is required before ‘uniform’ stoichiometry is attained. Also, it is unclear how inclusive a range the limitation ‘substantially’ is intended by the applicant. It is not known what range the applicant considers as ‘substantially uniform’ before it can be deemed otherwise. Therefore, the limitation ‘substantially’ does not adequately define the metes and bounds of the claims.” Reconsideration is respectfully requested.

The phrases ‘uniform’ and ‘substantially uniform,’ utilized in the language of the claims, are readily understood by those with skill in the art, particularly when the claims are read in light of the specification. Seattle Box Co., Inc., v. Ind. Crating and Packing, Inc. 221 U.S.P.P.Q. 569 (Fed. Cir. 1984), a copy of which is attached as Appendix “A”. ‘Uniform’ is a well known term which means “having always the same form, manner or degree: not varying or variable.” Merriam Webster’s Collegiate Dictionary, Tenth Edition, © 2001, p. 1287. The term ‘substantially uniform’ allows for some slight deviation from perfect uniformity which is difficult to achieve in the real world. The term ‘substantial’ is often used in claim drafting and been held to be a definite term by the court. Seattle Box Co., Inc., v. Ind. Crating and Packing, Inc. 221 U.S.P.P.Q. 569 (Fed. Cir. 1984). Accordingly, one skilled in the art would have no difficulty in understanding that the

stoichiometry of the sidewall defined in the claims need not be exactly uniform but substantially uniform.

Furthermore, 'uniform' and 'substantially uniform', the phrases objected to by the Office Action, are contained in the 'Response to Argument' section of the Office Action. ("Azuma clearly states a dielectric thin film be additionally doped in order to maintain the film's stoichiometry. This additional doping remains in the film and finalizes the film's uniform stoichiometry...(1:3:1) within a semiconductor device. Therefore, a film of a "substantially" uniform." and in 'Product by process' comments: "The limitation 'having a post deposition doping' merely recites a process of forming a semiconductor device and does not affect the final structure of a capacitor with a BST high dielectric constant thin film whose stoichiometry is substantially uniform.") These comments indicate little difficulty in understanding the terms. Accordingly, the rejection of claims 39, 41-48, 50-56 and 74-83 should be withdrawn.

Claims 39 and 41-47 stand rejected under 35 U.S.C. § 103 as being unpatentable over Laibowitz et al. (U.S. Patent No. 6,088,216)("Laibowitz") in view of Azuma et al. (U.S. Patent No. 5,516,363) ("Azuma"). In particular, the Office Action states that "Laibowitz discloses (see, for example, FIG. 7) a DRAM capacitor comprising a substrate (material layer) 12, whereupon a mesa (a first level and a second level, sidewall region) 51 and high dielectric film (high dielectric constant thin film material) 56 are formed. Laibowitz does not disclose doping of said BST high dielectric thin film material being such that the stoichiometry of said BST high dielectric thin film material is substantially uniform at least at said sidewall region. However, Azuma discloses (see, for example, column 6, lines 35-45) that doping with additional A or B site type element in an  $ABO_3$  dielectric, such as BST, of a DRAM capacitor will keep uniform the overall stoichiometric ratio and therefore minimize crystal defects....Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to dope A or B elements in the high dielectric film of Laibowitz so that a uniform stoichiometry and crystal defects are minimized....[furthermore,] that Azuma clearly states a dielectric thin film be

additionally doped in order to maintain the film's stoichiometry. This additional doping remains in the film and finalizes the film's uniform stoichiometry...(1:3:1) within a semiconductor device. Therefore, a film of a "substantially" uniform.' Reconsideration is respectfully requested.

Claim 39 recites, inter alia, a capacitor comprising "a material layer having a first level and a second level, said first and second levels being connected by a sidewall region between said first and second levels; and a post deposition doped BST high dielectric constant thin film material formed on at least one said sidewall region, wherein the stoichiometry of said BST high dielectric thin film material is substantially uniform at least at said sidewall region."

The present invention is directed to ensuring a uniform stoichiometry in BST high dielectric thin film material when the material is applied to a sidewall, or to form a sidewall. The film structure's stoichiometry is critical to the electrical functionality of the film. A substantial uniform stoichiometry ensures that the film has good dielectric properties. Applying a thin film dielectric material to form a sidewall, or over a sidewall, formed by a mesa, step, cap, or another three dimensional structure, usually changes the stoichiometry of the thin film dielectric layer away from being uniform. The resulting thin film layer will have a inhomogeneous stoichiometry and a decreased percentage of Titanium. The present application addresses and solves this issue by ensuring that the BST thin film dielectric applied either over, or to form, a sidewall have a substantial uniform stoichiometry to maintain good dielectric properties. This is accomplished by using a post deposition doped BST material which has a substantially uniform stoichiometry at least at a sidewall region.

Laibowitz discloses a capacitor using a high dielectric constant material, and method of making it, which seeks to address the problem in which a bottom electrode and a dielectric layer chemically interact to form a silicon layer in series or below the desired dielectric layer. Although Laibowitz discloses sidewalls of a mesa or a stack, i.e., a capacitor, covered by a thin film dielectric material, Laibowitz does not disclose or suggest

maintaining a substantially uniform stoichiometry of thin film dielectric material on the sidewall. Laibowitz also fails to disclose the importance of a maintaining such a uniform stoichiometry in the layer of thin film dielectric material on a sidewall. Furthermore, Laibowitz does not disclose or suggest that a sidewall, created by a mesa, stack, trench, or other three dimensional object, affects the stoichiometry of a layer of dielectric material applied over the sidewall. As noted in the office action, "Laibowitz does not disclose doping of said BST high dielectric thin film material being such that the stoichiometry of said BST high dielectric film material is substantially uniform at least at said sidewall regions."

Azuma discloses a method for producing specially doped dielectric compositions having high dielectric constants and low conductive leakage currents. Azuma discloses a method to achieve a uniform stoichiometry in dielectric materials by adding doping, and possibly adding a dopant compensator, to the formulation of the precursor material. Although Azuma may suggest that additional doping or dopant compensator (B or A site material) may be required in the formulation of the precursor material to maintain a uniform stoichiometry in the precursor, Azuma does not disclose or suggest that the application of a thin film dielectric layer over a sidewall, or to form a sidewall, will effect the uniform stoichiometry of the resulting thin film dielectric material layer. According to Azuma, the precursor dielectric material is applied to the substrate after adding the additional doping. Therefore, the precursor material is applied after attempting to homogenize the material's stoichiometry and before the stoichiometry will be effected by applying the material over a sidewall or to form a sidewall.

Furthermore, Azuma's application method is directed toward two dimensional surfaces as the application discloses a "spin on" method to apply the precursor material to form a thin film dielectric layer. As seen in Azuma FIG. 3, Azuma suggests the application of dielectric materials to horizontal surfaces. Azuma does not suggest application of the precursor thin film dielectric material to sidewalls or to form sidewalls. Nor does Azuma suggest or disclose the problem of maintaining the stoichiometry of thin film dielectric

material when applied to a sidewall formed from mesas, steps, trenches, or other three dimensional structures. Furthermore, Azuma does not suggest or disclose any particular techniques to apply the thin film dielectric material to a sidewall associated with a mesa, stack, trench or other three dimensional structure on the substrate that will maintain the uniform stoichiometry of the thin film dielectric material on the sidewall. Therefore, the precursor may have a uniform stoichiometry when formulated, but after applying the precursor to sidewalls, the thin film dielectric layer may no longer have a uniform stoichiometry.

Only the present application identifies and addresses the problem of maintaining a substantially uniform stoichiometry of the thin film dielectric material layer film on a side wall formed by a mesa, stack, trench, or other three dimensional structure. Furthermore, Claim 39 imparts a structure not found in either Azuma or Laibowitz--a post deposition doped material with a substantially uniform stoichiometry--that seeks to address the problem recognized by the current invention. Since neither of the references identify or recognize the problem, which is solved by the claimed invention, there is no motivation, teaching or suggestion in the references for the claimed invention. If the prior art does not even recognize the problem, the solution to the problem can not be deemed obvious. See, In re Sponnoble, 405 F.2d 578, 160 U.S.P.Q. 237 (C.C.P.A. 1969); Ex parte Campbell, 211 U.S.P.Q. 575 (Bd. App. 1981). Neither Azuma nor Laibowitz identify or recognize the problem addressed by the invention, much less disclose or suggest its solution. Nor is there any motivation to combine Azuma with Laibowitz. Accordingly, the rejection of claim 39 should be withdrawn.

Claims 41-47 depend from claim 39 and likewise the requirement that the stoichiometry of the BST high dielectric film material is substantially uniform at least at the sidewall regions is not disclosed or suggested by Laibowitz in view of Azuma. Accordingly, the rejection of those claims should be withdrawn.

Claims 48 and 50-56 stand rejected under 35 U.S.C. § 103 as being unpatentable over Laibowitz in view of Azuma as applied to claims 39, and 41-47 above,

and further in view of Leung et al. (U.S. Patent No. 5,563,762) (“Leung”). In particular, the Office Action states that “Laibowitz in view of Azuma does not have a capping layer. However, Leung discloses that a capping layer may be formed to encapsulate a capacitor structure. See, for example, column 2, lines, 27-56. Leung teaches that adding a capping layer protects the capacitor from diffusion and contamination. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to include a capping layer in the capacitor structure of Laibowitz in view of Azuma so that the above cited problems can be avoided.” Reconsideration is respectfully requested.

Claim 48 recites, inter alia, a capacitor comprising “A capacitor comprising: a material layer having a first level and a second level, said first and second levels being connected by a sidewall region between said first and second levels; a post deposition doped BST high dielectric constant thin film material formed on at least one said sidewall region, wherein the stoichiometry of said BST high dielectric thin film material is substantially uniform at least at said sidewall region; and a capping layer provided over at least a portion of said BST thin film material.”

Leung discloses a capacitor and method of forming an integrated circuit and a method of adding on-chip capacitors to an integrated circuit. As part of this disclosure, Leung discloses a that a capping layer may be formed to encapsulate a capacitor structure. Although Leung discloses dielectric layers covering a mesa, step, trench, or some other three dimensional structure that is on, or part of, the substrate, Leung fails to disclose or suggest that a side wall, formed by a mesa, step, trench, or some other three dimensional structure, affects the uniform stoichiometry of a thin film dielectric layer on a sidewall. Therefore, Leung does not disclose or suggest a solution to overcome the lack of uniform stoichiometry of a thin film dielectric layer of material applied on a side wall of a three dimensional structure. Furthermore, Claim 48 imparts a structure not found in either Azuma or Laibowitz--a post deposition doped material with a substantially uniform stoichiometry--that seeks to address the problem recognized by the current invention. Since Leung nor Azuma nor Laibowitz do not identify or solve the problem addressed by

the present invention, they fail to disclose the present invention. Nor is there any motivation to combine Leung with Azuma and Laibowitz. Accordingly, the rejection of claim 48 should be withdrawn.

Claims 50-56 depend from claim 48 and likewise the requirement that the stoichiometry of the BST high dielectric film material is substantially uniform at least at the sidewall regions is not disclosed or suggested by Laibowitz in view of Azuma and Leung. Accordingly, the rejection of those claims should be withdrawn.

Claims 74-83 stand rejected under 35 U.S.C. § 103 as being unpatentable over Hosotani et al. (U.S. PTO No. 6,051,859) ("Hosotani") in view of Azuma. In particular, the Office Action states that "Hosotani discloses (see, for example FIG. 7B and column 12, lines 31-44) a capacitor comprising a substrate 31, first electrode 32, dielectric film 34 and second electrode 35. Hosotani does not disclose doping said dielectric film such that the stoichiometry of said film is substantially uniform at least at said sidewall region. However, Azuma discloses (for example, column 6, lines 35-45) that doping with additional A or B site type element in a  $ABO_3$  dielectric of a DRAM capacitor will keep uniform the overall stoichiometric ratio. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to dope A or B elements in the high dielectric film of Hosotani so that a uniform stoichiometry is maintained." Reconsideration is respectfully requested.

Claim 74 recites, inter alia, an integrated circuit capacitor device comprising: "a material layer having a first level and a second level, wherein said first and second levels are connected by a sidewall region between said first and second levels; a first electrode provided at least on said sidewall region; a post deposition doped BST high dielectric constant thin film material provided on at least one said first electrode, wherein the stoichiometry of said BST high dielectric thin film material is substantially uniform at least at said sidewall region; and a second electrode provided on said BST high dielectric thin film layer."



Hosotani discloses a stacked type capacitor semiconductor device formed on the contact hole of the underlying insulating film, and method for manufacturing the device. Hosotani does not disclose or suggest providing a doped deposited thin film dielectric having a uniform stoichiometry on a sidewall structure. As the Office Action points out, "Hosotani does not disclose doping said dielectric film such that the stoichiometry of said film is substantially uniform at least at said sidewall region." Nor does Azuma address maintaining the stoichiometry of a BST high dielectric film material being substantially uniform at the sidewall regions. Furthermore, Claim 74 imparts a structure not found in either Azuma or Laibowitz--a post deposition doped material with a substantially uniform stoichiometry--that seeks to address the problem recognized by the current invention. Since Hosotani nor Azuma do not solve the problem addressed by the present invention, they fail to disclose the present invention. Accordingly, the rejection of claim 74 should be withdrawn.

Claims 75-83 depend from claim 74 and likewise the requirement that the stoichiometry of the BST high dielectric film material is substantially uniform at least at the sidewall regions is not disclosed or suggested by Hosotani in view of Azuma. Accordingly, the rejection of those claims should be withdrawn.

The Office Action further comments on "Product by Process Limitations". The Office Action states " while not objectionable, the Office reminds Applicant that 'product by process' limitations in claims drawn to structure are direct to the product, per se, no matter how actually made....Thus, no patentable weight will be given to those process steps which do not add structural limitations to the final product. The limitation 'having a post deposition doping' merely recites a process of forming a semiconductor device and does not affect the final structure of a capacitor with a BST high dielectric constant thin film whose stoichiometry is substantially uniform. Since the applicant's claims are directed towards a device, only the limitations that determine the device's final structure will be considered." Claims 39, 48 and 74 impart a structural limitation--the structure being a 'doped deposited film.' Having imposed structural limitations on the final product, not a

process step, 'patentable' weight applies to those limitations. Consequently, reconsideration is respectfully requested.

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to withdraw the outstanding rejection of the claims and to pass this application to issue.

Dated: June 12, 2002

Respectfully submitted, .

By 

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Registration No.: 28,371

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Attorneys for Applicant

39. (Third Amended) A capacitor comprising:

a material layer having a first level and a second level, said first and second levels being connected by a sidewall region between said first and second levels; and

a post deposition doped BST high dielectric constant thin film material [deposited] formed on at least one said sidewall region, [said deposited BST thin film material having a [post deposition doping such that] wherein the stoichiometry of said BST high dielectric thin film material is substantially uniform at least at said sidewall region.

48. (Third Amended) A capacitor comprising:

a material layer having a first level and a second level, said first and second levels being connected by a sidewall region between said first and second levels;

a post deposition doped BST high dielectric constant thin film material [deposited] formed on at least one said sidewall region, [said deposited BST thin film material having a post deposition doping such that] wherein the stoichiometry of said BST high dielectric thin film material is substantially uniform at least at said sidewall region; and

a capping layer provided over at least a portion of said BST thin film material.

74. (Third Amended) An integrated circuit capacitor device comprising:

a material layer having a first level and a second level, wherein said first and second levels are connected by a sidewall region between said first and second levels;

a first electrode provided at least on said sidewall region;

a post deposition doped BST high dielectric constant thin film material provided on at least one said first electrode, [said deposited BST high dielectric thin film material having a post deposition doping such that] wherein the stoichiometry of said BST high dielectric thin film material is substantially uniform at least at said sidewall region; and

a second electrode provided on said BST high dielectric thin film layer.

in order to bring that issue into the case. D.L. Auld v. Chroma Graphics Corp., 714 F.2d at 1150, 219 USPQ at 17; accord T.P. Laboratories, Inc. v. Professional Positioners, Inc., 724 F.2d at 971, 220 USPQ at 582. In a summary judgment proceeding, the patent owner need, of course, only appropriately put forth facts indicating an ability to come forward with necessary evidence. D.L. Auld Co. v. Chroma Graphic Corp., 714 F.2d at 1150, 219 USPQ at 17.

Before the trial court and before this court, Barmag was unable to point to proffered evidence supporting an inference that the offer for sale was for experimental purposes. At best Barmag showed that it lost money on the deal with Burlington and relocated some parts of the machine actually delivered. Such evidence raises no genuine issue of fact on this issue.

## VI

For the foregoing reasons, we hold that summary judgment was appropriate in this case. The district court correctly held that there was no genuine issue of material fact for trial and that the invention was on sale in the United States more than one year prior to the filing of the U.S. patent application. Accordingly, the judgment of the district court that the patent is invalid under 35 U.S.C. §102(b) is affirmed.

### Court of Appeals, Federal Circuit

Seattle Box Company, Inc. v. Industrial Crating & Packing, Inc. et al.

No. 83-890

Decided Mar. 26, 1984

### PATENTS

#### 1. Court of Appeals for the Federal Circuit — Weight given decision reviewed (§26.59)

CAFC, confronted with challenge to trial court's judgment on issue of obviousness, begins with careful review of district court's fact-findings made according to Supreme Court's ritual — scope and content of prior

art are to be determined, differences between prior art and claims at issue are to be ascertained, and level of ordinary skill in pertinent art resolved; CAFC cannot set these fact-findings aside unless appellant persuades it that findings are clearly erroneous.

#### 2. Court of Appeals for the Federal Circuit — Pleading and practice (§26.57)

CAFC does not consider evidence de novo.

#### 3. Presumption from patent grant — Patent Office consideration of prior art (§55.5)

Even if prior art is more pertinent than art which patent examiner cited, this fact alone does not rebut statutory presumption of validity.

#### 4. Court of Appeals for the Federal Circuit — Weight given decision reviewed (§26.59)

Evidence — Expert testimony (§36.10)

Trial judge has sole discretion to decide whether or not he needs, or even just desires, expert's assistance to understand patent; CAFC will not disturb that discretionary decision except in clearest case.

#### 5. Pleading and practice in courts — Burden of proof — Validity (§53.138)

Patent challenger bore burden in trial of persuasion that one of ordinary skill in art would have found subject matter claimed, as whole, obvious at time invention was made.

#### 6. Claims — Indefinite — In general (§20.551)

That some language may not be precise, does not automatically render claim invalid; when word of degree is used district court must determine whether patent's specification provides some standard for measuring that degree; trial court must decide, whether one of ordinary skill in art would understand what is claimed when claim is read in light of specification.

#### 7. Reissue — In general (§58.1)

Recapture rule does not apply where there is no evidence that amendment of originally filed claims was in any sense admission that scope of that claim was not in fact patentable.

#### 8. Infringement — In general (§39.01)

Reissue—In general (§58.1)

35 USC 252 allows claims in reissue patent to reach back under certain circumstances to date original patent issued.

Appendix  
"A"

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Expert testimony (§36.10)

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## 9. Infringement — Time of infringement (§39.85)

### Reissue — In general (§58.1)

Original patent cannot be infringed once  
reissue patent has issued, since original patent  
is surrendered; to ameliorate harsh effect of  
patent's surrender, Congress has legislated  
that under certain circumstances claims of  
original patent have form of continuity if  
carried over to reissue patent; Congress, in 35  
USC 252, explicitly limited claim continuity  
to claims in reissued patent identical to claims  
in original patent; statute does not allow  
claims of original patent some other form of  
survival; original claims are dead; statute per-  
mits, however, claims of reissue patent to  
reach back to date original patent issued, but  
only if those claims are identical with claims  
in original patent; with respect to new or  
amended claims, infringer's liability com-  
mences only from date reissue patent is  
issued.

## 10. Reissue — Same invention as original (§58.7)

"Identical," as used in first paragraph of  
35 USC 252, means, at most, "without sub-  
stantive change;" district court erred in inter-  
preting "identical" to mean "essentially  
identical."

## 11. Infringement — Substitution of equiv- alents — In general (§39.751)

### Words and phrases (§70)

Doctrine of equivalents only comes into  
play when there is no literal infringement;  
"substantially equal to" limitation under doc-  
trine of equivalents embraces "slightly less  
than."

## 12. Infringement — In general (§39.01)

Trier of fact must determine scope of im-  
precise phrase such as "substantially equal  
to," which, by its very nature, has fact-de-  
pendent meaning; fact that spacer block one-  
sixteenth of inch less than pipe diameter  
infringes claim does not necessarily indicate  
that spacer block one-quarter of inch less  
than pipe diameter also infringes that claim.

## 13. Infringement — Substitution of equiv- alents — In general (§39.751)

Normally, if trier of fact has found that  
there is no literal infringement, it may consid-  
er whether there is infringement under doc-  
trine of equivalents.

## 14. Reissue — Intervening rights (§58.5)

When reissue patent issues, new patent  
with presumably valid claim exists; reissue

patent has same effect and operation in law,  
on trial of actions for causes thereafter aris-  
ing, as if same had been originally granted in  
amended form; 35 USC 252 expressly pre-  
vents court from giving consideration to pro-  
tection of intervening rights; second para-  
graph of Section 252 modifies first paragraph,  
however, so as to protect intervening rights;  
statute sets forth single straightforward test  
for determining whether doctrine of interven-  
ing rights protects alleged infringer; only  
question to ask under this test is whether  
claims of original patent repeated in reissue  
patent are infringed; Section 252 assumes  
patentee having valid claims will retain them  
in reissued patent; if valid claims in original  
patent appear unaltered in reissue patent,  
doctrine of intervening rights affords no pro-  
tection to alleged infringer.

## 15. Reissue — Intervening rights (§58.5)

When doctrine of intervening rights is  
properly raised, court must consider whether  
to use its broad equity powers to fashion  
appropriate remedy; court is given discretion  
to fashion remedy from wide range of options  
available to it; court may confine infringer to  
use of infringing devices already in existence,  
permit infringer to continue operations in  
business under conditions which limit  
amount, type, or geographical location of its  
activities, or permit infringer to continue in  
business unconditionally; trial court, properly  
to exercise its equity powers, must carefully  
weigh standard equitable considerations.

### Particular patents — Shipping Bundles

Re. 30,373, Nist, Shipping Bundle for Nu-  
merous Pipe Lengths, holding of validity af-  
firmed; holding of infringement modified.

Appeal from District Court for the West-  
ern District of Washington, McGovern, Chief  
Judge; 217 USPQ 343.

Action by Seattle Box Company, Inc., do-  
ing business as Seattle-Tacoma Box Com-  
pany, against Industrial Crating and Packing,  
Inc. and James F. Rennels, for patent in-  
fringement, in which defendants counterclaim  
for declaration of patent invalidity, noninfrin-  
gement, and patent misuse. From judgment  
for plaintiff, defendants appeal. Modified.

Richard W. Seed, Seattle, Wash. (B.F. Berry,  
Seattle, Wash., on the brief) for appellant.

F.A. Utecht, Long Beach, Calif. (Ford E.  
Smith and David L. Garrison, both of  
Seattle, Wash., on the brief) for appellee.

Before Davis, Circuit Judge, Nichols, Senior Circuit Judge, and Baldwin, Circuit Judge.

Nichols, Senior Circuit Judge.

This appeal is from a judgment of the United States District Court for the Western District of Washington, holding United States Patent No. Re. 30,373 valid and infringed, 217 USPQ 343 (W.D. Wash. 1982), granting a permanent injunction, and awarding damages. We affirm in part, reverse in part, vacate in part, and remand.

# I

## Background

Plaintiff-appellee Seattle Box Company, Inc. ("Seattle Box") and defendant-appellant Industrial Crating and Packing, Inc. ("Industrial") are Washington State corporations which provide oil pipe bundling services to oil companies. Both corporations have their principal places of business in Washington State.

Seattle Box filed this action on July 2, 1980, alleging that Industrial infringed U.S. Patent No. 4,099,617 ("the '617 patent") entitled "Shipping Bundle for Numerous Pipe Lengths." Seattle Box brought the action in its capacity as assignee of the rights in the '617 patent. On August 19, 1980, the United States Patent and Trademark Office ("PTO") reissued the '617 patent, with broadened claims, in U.S. Patent No. Re. 30,373 ("the '373 reissue patent"). Seattle Box also was the assignee of the rights in this patent. On October 10, 1980, Seattle Box amended its complaint to allege infringement of the '373 reissue patent. Industrial answered and counterclaimed, alleging patent invalidity, noninfringement, and patent misuse.

The district court held in favor of Seattle Box on May 4, 1982, and after an accounting for damages, entered judgment on February 9, 1983. Industrial presses only the issues of patent invalidity and noninfringement here on appeal.

### A. The Invention

Until at least 1975, oil companies commonly transported oil pipes of various diameters and with weights upwards of 40 pounds per foot, as loose joints about 40 feet in length. Since no packaging procedure capable of safely and securely handling oil country pipe then existed, many pipes were irreparably da-

maged in transit and during loading and unloading operations. Rennels, a representative for Atlantic Richfield Company ("ARCO"), in late 1975 recognized ARCO's pipe transport problems and discussed with the patentee, Ferdinand J. Nist, Jr. ("Nist"), ARCO's need for a pipe bundling method which would get oil pipe to the Alaskan North Slope without bends, dents, or damaged ends. Although at the time of this discussion Nist had no experience in packaging oil pipes, he nevertheless undertook the project.

After extensive experimentation, which the district court opinion sets forth in great detail, Nist settled on a system in which he placed a tier of pipes across parallel horizontal wooden beams, or "sleepers." To ensure that adjacent pipes remained separated, Nist placed between them a double-concave wooden spacer block, depicted in Figure 1.



Figure 1

Nist stacked several tiers of these crossing rows of sleepers and pipes in order to make one pipe bundle. To prevent the weight of the upper pipes from crushing the lower pipes in either a bundle or a stack of bundles, Nist made his spacer blocks with a height at least equal to the pipe's diameter; the spacer blocks, therefore, absorbed most of the weight of the overhead load.

Figures 2-4 below depict a pipe bundle made according to the Nist method. In these figures, pipes 18, 36, and 44 lie across wooden sleepers 10, 30, 40, and 50. Double-concave spacers 22 separate the pipe. Finally, strapping materials 38, 46, 52, 59, and 60 hold together the entire bundle.

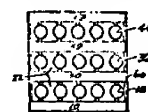


Figure 2

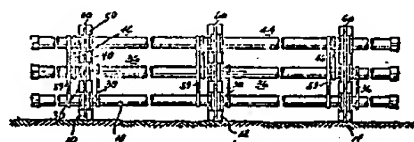


Figure 3

during loading and unloading, a representative of the Richfield Company recognized ARCO's invention and discussed with J. Nist, Jr. ("Nist"), the bundling method of pipe to the Alaskan Pipeline, dents, or damage at the time of this experience in packaging, Nist undertook the

invention, which the court set forth in great detail, in which he placed a vertical horizontal wooden spacer to ensure that adjacent pipes, Nist placed between the wooden spacer and the pipes.

ers of these crossing pipes in order to make sure the weight of the upper pipes in the bundle of bundles, Nist with a height at least equal to the diameter of the pipe. Finally, the spacer carried most of the weight

to depict a pipe bundle in Nist's method. In these figures 44 lie across wood-block 50. Double-concave spacer 46, 48, 52, 54, and 56 are used to hold the pipes in the bundle.

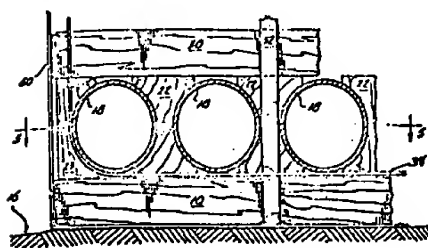
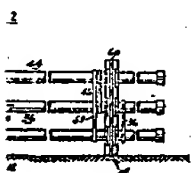
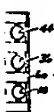


Figure 3

### B. The Patent

Seattle Box filed an application for a patent on Nist's invention on February 17, 1977. Claim 1 of this application stated that the double-concave spacer block had a "height substantially equal to the thickness of the tier of pipe lengths."

Seattle Box's patent attorney, however, narrowed Claim 1 during the application's prosecution so as to specify that the spacer block had a height only "greater than the diameter of the pipe." Soon after the attorney made this narrowing amendment, although not necessarily because of it, the patent examiner allowed each of the application's claims. The '617 patent issued on July 11, 1978.

On December 1, 1978, Seattle Box filed an application to have the '617 patent reissued with broader claims. Nist averred in support of this application that neither the patent examiner nor the cited prior art required the narrow scope of the issued claims, and that the limitation on the height of the spacer block in his Claim 1 was unnecessary and "arose through inadvertence by counsel." Nist additionally stated that "in reality each overlying or superposed sleeper need only be separated from its underlying companion a distance equal to but not less than the diameter (i.e., the thickness) of the pipes in each tier interposed between the sleepers to avoid forces being applied to squeeze the pipe in bundle stacks or handling operations \*\*\*."

The PTO granted the application for the reissue patent and issued the '373 reissue patent on August 19, 1980. In addition to allowing Seattle Box to amend Claim 1 to specify a spacer block "of a height substantially equal to or greater than the thickness of the tier of pipe length" [emphasis in original], the PTO also allowed five wholly new claims, Claims 8-12.

The reissued, amended Claim 1, upon which claims 2-6 depend, is a product claim for:

1. A shipping bundle formed of a plurality of lengths of pipe of a common size, comprising:

a base formed of a first plurality of transverse sleepers located in spaced-apart parallel arrangement;

a tier of pipe lengths resting on said base, adjacent pipe lengths of said tier being separated by blocks in transverse series, each block having opposed concavities substantially embracing the curved sides of said adjacent pipe lengths;

each of said series of blocks being located to stand on one of said sleepers and being of a height substantially equal to or greater than the thickness of the tier of pipe lengths;

a second plurality of sleepers, each traversing said pipe tier in overlying alignment with a sleeper of said first plurality, the sleepers of said second plurality being supported on the series of separating blocks; and

a bundling strap tightly encircling each sleeper of said first plurality, the separating blocks resting thereon, and the respective overlying sleeper. [Emphasis in the claim.]

The reissued, new Claim 8, upon which claims 10 through 12 depend, is a claim for a process using:

8. The method of bundling a plurality of lengths of pipe of a common size, comprising:

forming a first bundle base by laying down a first plurality of transverse sleepers in spaced-apart parallel locations;

depositing a first tier of pipes on said bundle base and at each location concavely chocking adjacent pairs of pipes of said tier in spaced-apart relation;

traversing the first tier of pipes with a second plurality of transverse sleepers aligned with said first plurality at each location and vertically [sic] spaced apart by said chocking from said first plurality a distance substantially equal to or greater than the diameter of said pipes;

tightly encircling the pipes of said first tier with strapping adjacent at least two of said locations; and,

tightly encircling the sleepers at each location with strapping.

Claims 7 and 9, withdrawn before trial, are not at issue here.



## II

## Issues

The parties argue three main issues in this appeal:

1. Did the trial court err in not holding the Nist '373 reissue patent invalid (a) for obviousness under 35 U.S.C. §103, (b) for indefiniteness under 35 U.S.C. §112, or (c) under the recapture rule for obtaining through reissue claims of improper scope?

2. Did the trial court err in (a) finding that Industrial presently infringes claims of the '373 reissue patent and (b) enjoining that infringement?

3. Did the trial court err in (a) finding that Industrial infringed claims of the '617 patent before the '373 reissue patent issued and (b) holding Industrial liable for that infringement?

## III

## Validity

## A. Section 103 — "Obviousness"

[1] We are, once again, confronted with a challenge to a trial court's judgment on the issue of obviousness. We begin, as usual, with a careful review of the district court's fact-findings made according to the Supreme Court's prescribed ritual: "the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved." *Graham v. John Deere Co.*, 383 U.S. 1, 17, 148 USPQ 459, 467 (1966). We cannot and will not set these fact-findings aside unless the appellant persuades us that the findings are clearly erroneous. Fed.R. Civ.P. 52(a). Since Industrial has not left us here with a definite and firm conviction that the trial judge has committed a mistake, we rely fully on the district court's findings.

## 1. Factual Determinations

## a. Scope and Content of the Prior Art

Before trial, Industrial identified as prior art some seventy United States patents, three West German patents, a 1960 Association of American Railroads ("AAR") publication entitled "Rules Governing the Loading of Steel

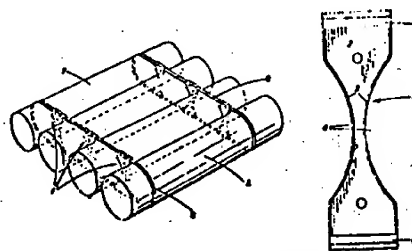
Products Including Pipe on Open Top Cars," and a United States Government leaflet on storage and materials handling. It is undisputed that no single prior art reference exhibits all the features of the invention claimed in the '373 reissue patent.

At trial, Industrial focused the court's attention on several prior art references which the patent examiner had not considered and which Industrial deemed significantly more pertinent than those references the examiner did cite. Industrial concentrated, in particular, on four references which the patent examiner did not cite: the AAR publication; British Patent No. 561,423, issued 1944; and Parker U.S. Patents Nos. 1,801,451, and 1,821,234, issued 1931.

The district court expressly held that this art was not more pertinent than the art which the patent examiner cited. The parties here have completely fashioned their argument around this art, however. We assume, therefore, that this art is appropriate for purposes of reviewing the district court's holding of nonobviousness.

The AAR publication discloses the use of (1) wooden sleepers between rows of pipe, (2) strapping material passing at various levels around the tiers of pipe, and (3) "wood chock blocks" cut to fit the contour of the pipe. The wood blocks, however, are nailed to only the ends of the sleepers; they are not placed between individual pipe.

The British Patent No. 561,423 discloses sheet metal spacers formed with double-concave faces which match the curvature of bundled cylindrical articles.



British Patent No. 561,423

## British Patent No. 561,423

Parker Patents Nos. 1,821,234 and 1,801,451 disclose spacers having double-concave sides to hold conduits in a spaced relationship. The Parker patents also disclose spacers used to support two tiers of pipe.

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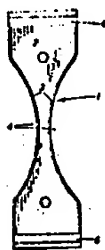
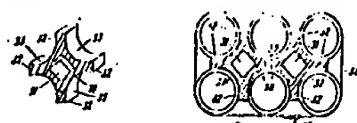


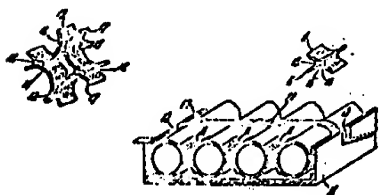
Fig. 1 of 561,423

561,423

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Parker Patent No. 1,801,451



Parker Patent No. 1,821,234

Parker Patent No. 1,801,451

Parker Patent No. 1,821,234

#### b. Differences Between Prior Art and '373 Reissue Claims.

The trial court found that although most of the elements of Nist's invention were known, nothing in the prior art disclosed a double-concave block adapted to provide vertical support for a layer or more of pipe. The prior art, that is, nowhere taught using wooden spacer blocks with a weight bearing capacity to support sleepers.

#### c. Level of Skill

The district court found, "the level of skill in the pipe packaging art at the time Nist made this invention to be that \*\*\* [of] persons familiar with the packaging of tubular goods for safe transportation from a packaging site to a remote location, with such persons having engineering or mechanical skills acquired by actual experience."

#### d. Other Considerations

The district court made several additional fact-findings which are relevant when reviewing an invention's obviousness. The court noted, in particular, that Nist solved after extensive experimentation a long-felt but unsolved need for an improved pipe bundle, and that Seattle Box enjoyed commercial success with its claimed bundle.

#### 2. Legal Determinations

[2,3] The district court held that Industrial did not meet its burden of overcoming the

'373 patent's statutory presumption of validity, 35 U.S.C. §282. Industrial simply rearranges to us its position that the facts clearly show the obviousness of the invention, relying on the "pertinence" of its newly discovered prior art. Industrial makes two fundamental errors, however. First, Industrial seems to forget that the district court expressly held that Industrial's art was *not* more pertinent than the art which the patent examiner cited. This court does not consider evidence de novo. *Rosemount, Inc. v. Beckman Instruments, Inc.*, Nos. 83-947, 83-1238, and 83-1251, slip op. at 7 (Fed. Cir. Feb. 16, 1984). Second, even if the art were more pertinent, this fact alone does not rebut the statutory presumption of validity. *Leinoff v. Louis Milona & Sons, Inc.*, \_\_\_\_ F.2d \_\_\_\_, 220 USPQ 845, 847-48 (Fed. Cir. 1984).

[4] In denouncing the district court's adverse holding, however, Industrial argues that the district court improperly adopted, and thus incorrectly relied on, the testimony of Seattle Box's expert. This argument has no merit. A trial judge has sole discretion to decide whether or not he needs, or even just desires, an expert's assistance to understand a patent. We will not disturb that discretionary decision except in the clearest case. This is not such a case. Here, the trial judge reasonably could have believed he needed the testimony of experts to aid him with the sometimes complex pipe specifications and prior art references.

[5] Industrial bore the burden in trial of persuasion that one of ordinary skill in the art would have found the subject matter claimed, as a whole, obvious at the time the invention was made. Industrial did not meet this burden; the facts do not clearly show it did. The invention comprises some features found in the prior art and some that are new and, in our view, not even suggested by the prior art. In *re Sernaker*, 702 F.2d 989, 217 USPQ 1 (Fed. Cir. 1983). The prior art did not suggest the combination of features made here. We affirm the district court's analysis of and holding of Industrial's section 103 defense.

#### B. Section 112 — "Indefiniteness"

Industrial argues that the use of the term "substantially equal to" in the '373 patent's claims makes the claimed subject matter indefinite and the claims invalid under 35 U.S.C. §112. Industrial contends, it appears, that since its patent counsel was uncertain as to just how equal "substantially equal to" is, the claims must be indefinite.

[6] Definiteness problems often arise when words of degree are used in a claim. That

some claim language may not be precise, however, does not automatically render a claim invalid. When a word of degree is used the district court must determine whether the patent's specification provides some standard for measuring that degree. The trial court must decide, that is, whether one of ordinary skill in the art would understand what is claimed when the claim is read in light of the specification.

The trial court found here that an expert would know the limitations of the claims. The specification clearly sets forth, for example, that the divider blocks are intended to absorb the weight of overhead loads. Furthermore, even if Industrial needed to experiment so as to determine the limits of the '373 patent's claims, the claims would not be invalid under section 112. See, e.g., *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1557, 220 USPQ 303, 316 (Fed. Cir. 1983). Industrial has not carried its burden of persuading us that the '373 patent is invalid for indefiniteness.

#### C. Recapture Rule

[7] Industrial argues that the PTO incorrectly allowed the broadened reissue claims with a scope equivalent to the scope of the preamended claims in the original patent application. The recapture rule does not apply here, however, because there is no evidence that Seattle Box's amendment of its originally filed claims was in any sense an admission that the scope of that claim was not in fact patentable. See *In re Petrow*, 402 F.2d 485, 488, 159 USPQ 449, 451 (CCPA 1968); See also *Ball Corp. v. United States*, No. 84-680 (Fed. Cir. March 15, 1984).

### IV

#### Liability

[8] The court must consider Industrial's liability for infringement, if any, during two different time frames. The first period extends between the date the original patent issued, July 11, 1978, and the date the reissue patent issued, August 19, 1980. Seattle Box's only enforceable patent rights during this period arise from 35 U.S.C. §252, which allows claims in a reissue patent to reach back under certain circumstances to the date the original patent issued. The second period begins on the date the reissued patent issued, August 19, 1980. During this period, Seattle Box's broadened patent claims cover a double-concave block with a height "substantially

equal to or greater than" the diameter of the separated pipes. We consider the two time periods *seriatim*.

#### A. Activities Occurring Before the '373 Reissue Patent Issued.

Industrial asserts that the district court erred in finding it liable for infringement done before the '373 reissue patent issued. We agree.

[9] An original patent cannot be infringed once a reissue patent has issued, for the original patent is surrendered. At one point in the history of the American patent law, this surrender precluded any action for infringement for acts done prior to the surrender. Courts would not allow a patentee to bring an action in response to acts done before the reissue patent issued since no patent existed upon which one could allege infringement. Courts, moreover, would dismiss for a failure to state a cause of action any action filed before the patent was surrendered since the patent sued on no longer existed. Courts acted, in other words, as if the original patent never was. See *Federico, Intervening Rights in Patent Reissues*, 30 Geo. Wash. L. Rev. 603, 605 (1962).

To ameliorate the harsh effect of a patent's surrender, Congress has legislated that under certain circumstances claims of the original patent have a form of continuity if carried over to the reissue patent. Congress has incorporated its most recent version of this rule into 35 U.S.C. §252, the first paragraph of which provides that:

The surrender of the original patent shall take effect upon the issue of the reissued patent, and every reissued patent shall have the same effect and operation in law, on the trial of actions for causes thereafter arising, as if the same had been originally granted in amended form, but *insofar as the claims of the original and reissued patents are identical*, such surrender shall not affect any action then pending nor abate any cause of action then existing, and the reissued patent, *to the extent that its claims are identical with the original patent*, shall constitute a continuation thereof and have effect continuously from the date of the original patent. [Emphasis supplied.]

Congress, in this statute, has explicitly limited claim continuity to claims in the reissued patent *identical* to claims in the original patent. The statute does not allow the claims of the original patent some other form of survival. The original claims are dead. The statute permits, however, the claims of the reissue patent to reach back to the date the

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[Emphasis supplied.]

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original patent issued, but only if those claims  
are identical with claims in the original pat-  
ent. With respect to new or amended claims,  
an infringer's liability commences only from  
the date the reissue patent is issued.

At issue in this case is Congress' meaning  
of the word "identical." The district court  
interpreted "identical" to mean "essentially  
identical," noting that other courts have inter-  
preted the word "identical" in section 252 in  
a way which does not limit claim continuity  
to literally identical claims. It cited *Austin v.*  
*Marco Dental Products, Inc.*, 560 F.2d 966,  
195 USPQ 529 (9th Cir. 1977), cert. denied,  
435 U.S. 918, 197 USPQ 448 (1978) and  
*Akron Brass Co. v. Elkhart Brass Manufac-*  
*turing Co.*, 353 F.2d 704, 147 USPQ 301  
(7th Cir. 1965).

Akron Brass and Austin permitted changes  
in a reissue patent's claims, however, only if  
without substance. In *Akron Brass*, a reissued  
claim substituted the word "outlet" for the  
word "inlet" in the original claim. Since it  
was already clear what was intended, the  
court there noted, substitution of "outlet" for  
"inlet" in no way enlarged or modified the  
substance of the claim. In *Austin*, the court  
found a claim in the reissued patent "identi-  
cal" to one in the original patent where a  
modification was made to "make more precise  
the language used without substantive  
changes in the claims." 560 F.2d at 973, 195  
USPQ at 534.

[10] Since we are not asked to, we do not  
have to decide exactly what "identical" does  
mean. It is clear, though, that "identical"  
means at most, "without substantive change."  
*Seattle Box*, in broadening its claims' scope to  
cover not only spacer blocks "greater than"  
but also "substantially equal to" the diameter  
of the pipes in a bundle, has, in our view,  
made substantive change to its claims. The  
original claims cannot reasonably be read as  
intending, but for some inaccuracy in their  
expression, the same coverage as the reissue  
claims. Here, the addition is not a matter of a  
mere clarification of language to make specifi-  
c what was always implicit or inherent.

We hold, therefore, that *Seattle Box's*  
broadened reissue claims, with the added  
words "substantially equal to," are not "iden-  
tical" to its original claims, assuming "iden-  
tical" means "without substantive change."  
The district court erred in interpreting "iden-  
tical" in section 252 to mean "essentially  
identical." Thus, *Seattle Box* cannot collect  
damages for any activities performed before  
its new and broadened claims issued in the  
reissue patent. We reverse the trial court's  
award of damages against *Industrial* for acts  
done prior to the date the reissue patent  
issued.

## B. Activities Occurring After the '373 Reissue Patent Issued.

*Industrial* argues that since *Seattle Box*  
gave up its claim to spacer blocks "substancially equal to" the diameter of the separated  
pipe during prosecution of the '617 patent,  
the doctrine of file wrapper estoppel prevents  
*Seattle Box* from "recapturing" that language  
under the doctrine of equivalents. *Industrial*  
contends, furthermore, that even if we affirm  
the district court's finding of infringement  
under the doctrine of equivalents, the doctrine  
of intervening rights, 35 U.S.C. §252, saves  
*Industrial* from liability. We consider the  
infringement argument first.

### 1. Infringement

The trial court found that *Industrial's* pipe  
bundles "clearly included each of the ele-  
ments of claims 1 through 5, 8, 10, and 11 of  
Re. 30,373." *Industrial* admits that its bun-  
dles utilize the general elements of the claims  
in issue, namely, sleepers, pipes, double-con-  
cave spacer blocks, and strapping material. In  
dispute is the scope of *Seattle Box's* reissued  
claim 1 which requires as a necessary element  
of the invention a spacer block "being located  
to stand on one of said sleepers and being of a  
height substantially equal to or greater than  
the thickness of the tier of pipe lengths."  
[Emphasis in original].

*Industrial* asks us to decide whether the  
'373 reissue patent's claims can have the  
effect of covering spacer blocks which are  
"slightly shorter" than the diameter of oil  
pipes which they separate. *Industrial* argues,  
first, that since *Seattle Box* gave up the  
phrase "substantially equal to" during its  
prosecution of the original patent application,  
it cannot assert that scope here. *Industrial*  
appears throughout its argument to forget  
that *Seattle Box* does not allege in this action  
infringement of its original claims, but rather,  
alleges infringement of presumably valid re-  
issue claims. These claims specifically extend  
to spacer blocks "substantially equal to" the  
separated pipes' diameters. *Seattle Box* has  
every right to assert the full scope of its claims  
here.

*Industrial* next argues that its spacer blocks  
are not substantially equal to the diameter of  
the separated pipes, as the claims require.  
*Industrial* contends that on the advice of its  
patent counsel, and specifically to avoid in-  
fringement, it instructed its spacer block man-  
ufacturer to make the spacer blocks for 5½"  
pipes at least one-sixteenth of an inch less  
than the pipe diameter.

[11] The district court found that the  
"slightly shorter, double-concave *Industrial*

blocks would correspond to the 'substantially equal to' limitation \* \* \* under the doctrine of equivalents. The court's belief that it found infringement under the doctrine of equivalents, however, is wrong. The doctrine of equivalents only comes into play when there is no literal infringement. See *Hughes Aircraft Co. v. United States*, 717 F.2d 1351, 1361, 219 USPQ 473, 480 (Fed. Cir. 1983). Since "substantially equal to" embraces "slightly less than," the district court's finding that Industrial's "slightly shorter" spacer blocks were "substantially equal to" the pipe diameter is a finding of literal infringement which is not clearly erroneous.

The district court expressly found infringement, though, only in regard to spacer blocks one-sixteenth of an inch less than the diameter of the separated pipe. This finding we affirm. The report of the Special Master concerning Seattle Box's lost profits, however, indicated that after trial had ended, Industrial made 84 pipe bundles with spacer blocks one-quarter of an inch less than the diameter of the separated pipe. The Special Master correctly refused to consider whether these blocks infringed the '373 reissue patent; he simply detailed the profits lost due to these bundles. The district court awarded damages for these bundles without making any express finding as to whether they infringed the '373 patent.

[12] As we indicated earlier, the trier of fact must determine the scope of an imprecise phrase such as "substantially equal to," which, by its very nature, has a fact-dependent meaning. The fact that a spacer block one-sixteenth of an inch less than a pipe diameter infringes a claim does not necessarily indicate that a spacer block one-quarter of an inch less than a pipe diameter also infringes that claim. There is a new literal infringement issue to decide: are spacer blocks one-quarter of an inch less than the diameter of the separated pipe "substantially equal to" the diameter of those separated pipes? The trier of fact must make express findings in response to this question. Such findings help delineate the metes and bounds of the claim, and enable the alleged infringer to determine what it must do to avoid infringement. We therefore vacate the award of damages as to the 84 bundles using spacer blocks one-quarter of an inch less than the diameter of the separated blocks and remand for the necessary findings of fact.

[13] We limit the remand in this case, however, to a determination of whether the quarter-inch short spacer blocks literally infringe the claims in issue. Normally, if the trier of fact has found that there is no literal infringement, it may consider whether there is infringement under the doctrine of equiv-

alents. Here, however, Seattle Box expressly stated during prosecution of its reissue patent that a sleeper "need only be separated from its underlying companion a distance equal to *but not less than* the diameter (i.e., the thickness) of the pipes in each tier interposed between the sleepers." [Emphasis supplied.] Since the claims issued for a separation "substantially equal to" the pipes' diameter, we recognize that some leeway is appropriate in determining literal infringement. Where no literal infringement exists, however, Seattle Box's statement during its prosecution of the reissue patent estops it from asserting that its claims have a broad effect under the doctrine of equivalents.

## 2. Section 252 — Intervening Rights

[14] When a reissue patent issues, a new patent with presumably valid claims exists. The reissue patent has "the same effect and operation in law, on the trial of actions for causes *thereafter arising*, as if the same had been originally granted in amended form, \* \* \*" 35 U.S.C. §252 [emphasis supplied].

The language quoted above expressly prevents a court from giving any consideration to the protection of intervening rights. The second paragraph of section 252 modifies the first paragraph, however, so as to protect intervening rights. The second paragraph provides, in pertinent part:

No reissued patent shall abridge or affect the right of any person \* \* \* who made \* \* \* or used prior to the grant of a reissue anything patented by the reissued patent, to continue the use of \* \* \* the specific thing so made \* \* \* or used, unless the making [or] using \* \* \* of such thing infringes a valid claim of the reissued patent which was in the original patent \* \* \*.

The statute sets forth a single straightforward test for determining whether the doctrine of intervening rights protects an alleged infringer. The only question to ask under this test is whether claims of the original patent which are repeated in the reissue patent are infringed. Section 252 assumes that a patentee having valid claims in a patent will retain those claims in the reissued patent. If valid claims in the original patent appear unaltered in the reissue patent, the doctrine of intervening rights affords no protection to the alleged infringer.

We have already held, however, that the claims appearing in Seattle Box's reissued patent are substantively different than those in the original patent. That is, Seattle Box repeats no claim from its original patent in its reissued patent. Industrial, therefore, may

ever, Seattle Box expressly  
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need only be separated from  
companion a distance equal to  
the diameter (i.e., the thick-  
ness in each tier interposed  
between the tiers.) [Emphasis supplied.]  
issued for a separation "sub-  
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find no leeway is appropriate in  
this infringement. Where no  
infringement exists, however, Seattle  
during its prosecution of the  
patent it from asserting that its  
patent had effect under the doctrine

## 52 — Intervening Rights

reissue patent issues, a new  
substantially valid claims exists.  
The patent has "the same effect and  
force, on the trial of actions for  
infringement, as if the same had  
been granted in amended form,  
under §252 [emphasis supplied]."

As quoted above expressly pre-  
cludes giving any consideration to  
the intervening rights. The sec-  
ond paragraph of section 252 modifies the  
rule, however, so as to protect  
the patent. The second paragraph  
of the patent provides:

patent shall abridge or affect  
any person \*\*\* who made  
prior to the grant of a reissue  
patent by the reissued patent,  
the use of \*\*\* the specific  
device \*\*\* or used, unless the  
use of \*\*\* of such thing in  
claim of the reissued patent  
is the original patent \*\*\*.

sets forth a single straightfor-  
ward determination whether the doc-  
trine of intervening rights protects an alleged  
infringement. The only question to ask under this  
rule is whether the claims of the original patent  
are covered by the claims of the reissued patent.  
If the original patent appears unaltered  
in the reissued patent, the doctrine of interven-  
ing rights provides no protection to the alleged

already held, however, that the  
claims in Seattle Box's reissued  
patent are substantively different than those  
of the original patent. That is, Seattle Box  
is not its original patent in its  
entirety. Industrial, therefore, may

properly raise a defense of intervening rights.  
See *Cohen v. United States*, 487 F.2d 525,  
179 USPQ 859 (Ct. Cl. 1973).

[15] When the doctrine of intervening  
rights is properly raised, the court must con-  
sider whether to use its broad equity powers  
to fashion an appropriate remedy. The second  
paragraph of section 252 states:

[The court] may provide for the continued  
manufacture, use or sale of the thing made  
\*\*\* or used as specified, or for the manu-  
facture, use or sale of which substantial  
preparation was made before the grant of  
the reissue, and it may also provide for the  
continued practice of any process patented  
by the reissue, practiced \*\*\* prior to the  
grant of the reissue, to the extent and under  
such terms as the court deems equitable for  
the protection of investments made or busi-  
ness commenced before the grant of the  
reissue.

The court is given the discretion to fashion  
a remedy from a wide range of options avail-  
able to it. The court may, for example, (1)  
confine Industrial to the use of those double-  
concave blocks already in existence, (2) per-  
mit Industrial to continue in business under  
conditions which limit the amount, type, or  
geographical location of its activities, or (3)  
permit Industrial to continue in business  
unconditionally.

The trial court, properly to exercise its  
equity powers, must carefully weigh standard  
equitable considerations. Since the trial court  
incorrectly held section 252 inapplicable here,  
it has yet to make any findings as to the  
equities of this case. Accordingly, we vacate  
this portion of the district court's judgment  
and remand the case for further proceedings  
consistent with this opinion.

## V

### Conclusion

We affirm the district court's holding that  
the '373 reissue patent is valid. We affirm its  
finding that some of Industrial's spacer blocks  
infringe the patent, but vacate the finding of  
infringement as to other blocks. We reverse  
the district court's finding of liability for any  
activities Industrial performed before the '373  
reissue patent issued. Finally, we vacate the  
district court's conclusions as to the scope of  
relief to which Seattle Box is entitled for  
infringement after the '373 reissue patent  
issued. We remand this case to the district  
court for further proceedings. Each party to  
bear its own costs.

Affirmed in Part, Reversed in Part,  
Vacated in Part, and Remanded

## Court of Appeals, Second Circuit

Springs Mills, Inc. v. Ultracashmere House,  
Ltd., et al.

No. 83-7333

Decided Dec. 23, 1983

## TRADEMARKS

### 1. Injunction — Trademarks (§40.7)

District court that conducted bench trial in  
first instance has wide discretion in determin-  
ing whether hearing is necessary on remand  
for evaluating plaintiff's contentions regard-  
ing effectiveness of limited disclaimer  
injunction.

### 2. Pleading and practice in courts (§67.63)

Questions of whether trademark infringer  
has not fully complied with terms of injunc-  
tion or whether injunction should be modified  
because of changed circumstances or whether  
contempt proceedings will lie are all decisions  
to be made initially by district court.

### 3. Accounting — Damages — Trademarks and unfair competition (§11.258)

Accounting may be appropriate whenever  
infringer's conduct is willful and owner of  
trademark is entitled to have claim for ac-  
counting considered by district court, where  
court previously found that infringer adopted  
mark and trade dress for no other purpose  
than to obtain free ride on good reputation of  
successful competitor; failure to consider  
trademark owner's request for accounting  
was abuse of discretion.

### 4. Costs — Attorney's fees (§25.5)

Circumstances constituting willful in-  
fringement qualify case as one in which dis-  
trict court should have considered available  
remedy of attorney's fees or, at least, should